

REMARKS

Claims 1, 28, 30-41, 44-49, 51-57, 61 and 63-68 are active.

Claim 69 is withdrawn.

Claim 1 is amended to clarify when the dispensing occurs. Support for this amendment is found in the specification in paragraphs [0073] through [0075]. No new matter is submitted. Accordingly, entry of the claim amendments set forth herein is respectfully requested.

With respect to item 1 of the Office Action, Applicant's acknowledge the withdrawal of the final Office Action pursuant to 37 CFR 1.114 and the entering of Applicants' submission filed on January 19, 2006.

With respect to item 2 of the Office Action, Applicants traverse the restriction of claim 69 as inappropriate in a non-final rejection. The Office Action states that the device of claim 1 does not require "a means for generating a control signal" as recited in claim 69. The Office Action further states that such means may be considered new matter for applicant has not indicated where support for such signaling device is provided for in the specification. Applicants believe it is appropriate in a non-final office action to add a new claim, and believe the subject matter to be supported in the specification. The language "means for generating a control signal...", in claim 69 finds support in the specification in paragraph [0086] which recites a "...controller of the driving means..." as an embodiment of a means for generating a control signal.

Therefore, Applicants believe that claim 69 should not be withdrawn and does not add new matter.

With respect to item 3 of the Office Action, Applicants have previously amended the Specification to address minor informalities found therein, and continue to be vigilant in becoming aware of, and correcting any errors.

With respect to item 4 of the Office Action, the Office Action states that the claim has been amended to incorporate “configured to” clauses that imply intended use of a particular element and desired function of the device as a whole. Configured is essentially interpreted in the same manner as “adapted to” and “capable of”. The Examiner further restates that claims 41 and 44 recite the phrase “capable of”. The Examiner further states that the only structural requirements of claim 1 is at least one conduit, an actuator, a voltage language. The Examiner states that it appears that Applicant would need for a programmed controller or computer, or other particular further structure which controls the device in the particular manner in which applicant intends for it to be used. The Examiner suggests amending the claim to recite, “a voltage controller programmed to...”. Applicants address the Examiner’s suggestion below, under items 5 and 6 regarding claim 1.

Further, the Examiner asserts the actuators of each of the recited references do move the respective liquid holding members in a direction opposite to the dispensing directions. The Office Action states that the devices of the references are electrically operated inherently comprising an element for supplying voltage.

Further, the Examiner states that the references cited in the Office Action recite deceleration and abrupt stoppage of the liquid holding means as the force that causes or initiates the liquid to be dispensed. The Examiner states that the references do not teach dispensing occurring instantaneously or only at a stoppage point. The

Examiner contends that the claims are unclear as to when dispensing occurs. Further, the Examiner suggest amending claim 1 to incorporate a phrase such as: “wherein dispensing occurs only when the conduit member moves in said opposite direction”.

In light of the Examiner’s remarks and to further clarify the invention as claimed, Applicants have herein amending claim 1 to include the language “... wherein dispensing substantially occurs while concurrently moving the conduit member in the direction opposite the dispensing direction.” Applicants believe the new language clarifies when the dispensing occurs.

Regarding claims 30-33, the Office Action states that these claims are process limitations and furthermore are redundant claims, and should be cancelled. Applicants have cancelled claims 30-33.

The Rejections under 35 USC 112

With respect to items 5 and 6, claims 1, 28, 30-40, 45-48, 51-53, 55 and 61-66 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

CLAIM 1:

Applicants have amending claim 1 as suggested by the Examiner to replace “a voltage applying mechanism” with “a voltage controller programmed to...”. The language “a voltage mechanism” is objected to by the Examiner as insufficient to control the device in the particular manner claimed, and also the language is rejected in item 6 of the Office Action under 35 USC 112. Support in the patent application for use of the

term voltage controller is found in the specification in paragraph [0086]. Therefore, Applicants assert that the above claim amendments remedy the Examiner's claim interpretation objections, and the rejections under 112.

With respect to items 5-7 of the Office Action, Applicants have amended the claims to address the various 35 USC 112, second paragraph, rejections raised in the Office Action. Regarding claim 1, the Examiner's suggestion has been incorporated in claim 1 as discussed above.

Regarding claims 34-36, the Examiner states that the claims are directed to how one intends to perform dispensing. Applicants have adopted the Examiner's suggestions to incorporate the voltage controller of amended claim 1, to add structure to the claims 34 and 35, and cancel claim 36 as the subject matter is covered in claim 35. Regarding claims 37-40, Applicants have amended the claims as suggested by the Examiner to relate the functions claimed to the programming of the voltage controller.

Regarding claims 28, 30-40, and 55, Applicants have amending claim 28 and assert that the claim now recites structure that remedies the rejection. Support for the claim language in claim 28 is found in Fig. 28, reference numeral 78, and in the specification, paragraph [0083].

Further, Applicants have canceled claims 30-33 as the subject matter is covered in claims 1, and 28, thereby obviating the Examiner's 112 rejection of these claims. Applicants further have canceled claims 45, 46, and 47, and amend claim 48 to define the air space, as well as cancel claim 49. As suggested by the Examiner, Applicants have amended claim 51 to replace the language "its one end" with "through the dispensing

end”, and replaced “the liquid holding member” with “at least one conduit member” in claim 52 to remedy the rejections.

Regarding claims 53 and 55, Applicant has canceling both claims as lacking structural limitations, and thereby obviating the Examiner’s rejection of the claims. Further, Applicants have deleted the phrase “a step of” in claim 61 as the Examiner suggests. Regarding claims 63 and 64, Applicants have affirmatively added the step of stopping the motion of the conduit member to claim 63, and added the step of moving the conduit member in the dispensing direction of the liquid in claim 64. Regarding claims 65 and 66, Applicants assert that claim 65 references a difference in magnitude of acceleration, and claim 66 references a larger acceleration when the conduit member is moving in the direction opposite the dispensing liquid.

The Substantive Rejections under 35 USC 102

With respect to the art rejections set forth in items 8–11 of the Office Action, claims 1, 28, 30-41, 44-49, 51-53, 55, 57, 61 and 63-68 are rejected under 35 USC 102e as being anticipated by Feygin US 5,957,167 (hereinafter Feygin). Claims 1, 61, and 63-68 are rejected under 35 USC 102(b) as being anticipated by Shalon et al. US 6,309,891. Claims 1, 28, 30-41, 44-49, 54-57, 61, and 63-68 are rejected under 35 USC 102(e) as being anticipated by Rose et al. US 6,551,557. The rejections are respectfully traversed.

Claim 1

1. (Currently Amended) A liquid pipetting apparatus for dispensing a minute amount of liquid comprising:

at least one conduit member for holding the liquid therein and having a dispensing end;
an actuator associated with the at least one conduit member, and a voltage controller programmed ~~applying mechanism configured~~ to move the at least one conduit member and dispense the liquid from a dispensing end thereof when the at least one conduit member is moved in a dispensing direction by voltage applied to the actuator, temporarily stopped, and then moved in a direction opposite the dispensing direction of the liquid by a decrease in the voltage applied to the actuator, wherein dispensing substantially occurs while concurrently moving the conduit member in the direction opposite the dispensing direction.

Claim 1 is amended to further clarify the invention by adding the language of the conduit member having a distal dispensing end, and proximal end associated with the actuator. Further, the language substantially dispensing the liquid from the dispensing end while concurrently moving the conduit member is added to claim 1 to clarify when the dispensing occurs. The Examiner states in paragraph 4 of the Office Action, that the references cited in the Office Action recite deceleration and abrupt stoppage of the liquid holding means as the force that causes or initiates the liquid to be dispersed, but, the references do not teach dispensing occurs instantaneously or only at stoppage point. Therefore, Applicants believe the language in claim 1, recited above, to not be anticipated by the references cited.

To maintain a 35 U.S.C. §102 rejection, a reference must teach each and every element of a claimed invention. Lindeman Maschinenfabrik GMBH v. American Hoist and Derrick Company, 730 F.2d 1452, 1458; 221 U.S.P.Q. 481, 485 (Fed. Cir., 1984). Feygin, nor the other cited references do not do so.

Applicants assert that Feygin fails to teach dispensing a fluid by movement of a dispensing member opposite the dispensing direction of the fluid as recited in claims 1, and 61. Applicant's arguments are similar to those in the response to the last Office

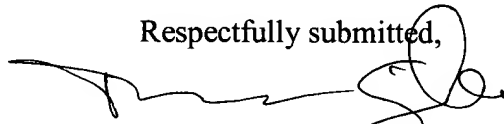
Action, and furthermore, the new claim language further clarifies the distinctions over the references particularly in light of the Examiner's remarks. Reiterating the most pertinent points of Applicant's arguments from the last Office Action, Feygin teaches movement of the dispensing members (330a-300c) in the same direction as the fluid being dispensed (Fig. 6 and col. 4, lines 32-44). Even where Feygin teaches a stop, as asserted in the Office Action, such is not movement opposite the dispensing direction of the fluid. Likewise, U.S. Patent No. 6,309,891 to Shalon teaches printing by movement of a fluid dispensing member in the same direction as the fluid dispensing direction (col. 2, lines 22-25 & 32-39, col. 6, line 65, and col. 7, line 5). Shalon thus does not teach or disclose dispensing liquid by movement of a dispensing member in a direction opposite the dispensing direction of the liquid as recited in claims 1, and 61. Finally, U.S. Patent No. 6,551,557 to Rose, et al. discloses dispensing fluid by contact of the nozzle 214 (or nozzle end 205) with a target by lowering dispensing members tips 200 to the target 30. Such dispensing thus occurs by movement of the tips 200 in the same direction as the dispensing direction of the fluid, which is opposite that recited in claims 1, 59 and 61. Alternatively, Rose requires a dispensing pump 22 in combination with an on-demand-valve 22 to eject liquid from the tips 200 and onto the target 30. Such combination of the dispensing pump 22 and the on-demand-valve 22 is neither recited, nor required, by Applicants' claimed invention as recited in either of claims 1, and 61. Accordingly, the art fails to teach or disclose the features recited in claims 1, and 61, from one of which the remaining claims depend.

Claims 28, 34, 35, 37-41, 44, 48, 51, 52, 54, 56, 57, are dependent from claim 1, and claims 63-68 are dependent from claim 61 and are rejected under 35 USC 102 as

anticipated by Feygin, Shalon, or Rose. The dependent claims incorporate all of the structure of claims 1 and 61, respectively, and are believed allowable for the same reasons discussed above. Therefore, Applicants' believe claims 1, 28, 34, 35, 37-41, 44, 48, 51, 52, 54, 56, 57, 61, and 63-68 to be allowable over the cited references.

Therefore, in view of the foregoing, applicants respectfully requests reconsideration, withdrawal of all rejections, and allowance of all pending claims in due course.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Thomas Spinelli', with a large, stylized 'S' at the end.

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